

Claims

1. In a press having a shaft adapted for rotational movement and a cam-operated switchgroup connected to the shaft by means of a connecting member, a method of monitoring fail-safe operation of the connecting member, said method comprising the steps of:

generating, by means of the cam-operated switchgroup, a pulse train comprising a number of successive pulses each separated one from another by an individual time interval, the individual time intervals between successive pulses being dependent on the rotational movement of the shaft,

determining a monitoring time period within which an expected next pulse of the pulse train should occur,

monitoring whether the expected next pulse actually occurs within the monitoring time period, and

generating a control signal if the expected next pulse does not occur within the monitoring time period,

wherein the monitoring time period is repeatedly adapted to the individual time intervals.

2. The method of claim 1, wherein the pulse train comprises a plurality of pulse edges and wherein the monitoring time period is determined as a function of the individual time intervals between two of the pulse edges.

3. The method of claim 2, wherein the monitoring time period is determined as a function of immediately successive pulse edges.

4. The method of claim 1, wherein the monitoring time period is newly determined for each expected next pulse.

5. The method of claim 1, wherein the expected next pulse comprises two pulse edges and wherein occurrence of each of these two pulse edges is monitored in the monitoring step.

6. In a press having a shaft adapted for rotational movement, a method of using a device for shear pin monitoring, said device having a first part for picking up a pulse train comprising a number of successive pulses which are separated one from another by individual time intervals dependent on the rotational movement of the shaft, having a second part for determining a monitoring time period, having a third part for monitoring whether an expected pulse of the pulse train occurs within the monitoring time period, and having a fourth part for generating a control signal when the expected pulse does not occur within the monitoring time period, the second part being configured to repeatedly adapt the monitoring time period to the individual time intervals.

7. A method for the failsafe monitoring of the rotational movement of a shaft, comprising the steps of:

generating a pulse train with a number of successive pulses separated by individual time intervals which are dependent on the rotational movement of the shaft,

determining a monitoring time period within which an expected pulse should occur,

monitoring whether the expected pulse occurs within the monitoring time period, and

generating a control signal if the expected pulse does not occur within the monitoring time period,

wherein the monitoring time period is repeatedly adapted to the rotational movement of the shaft during the monitoring.

8. The method of claim 7, wherein the pulse train comprises a plurality of pulse edges and wherein the monitoring time period is determined as a function of the individual time intervals between two of the pulse edges.

9. The method of claim 8, wherein the monitoring time period is determined as a function of directly successive pulse edges.

10. The method of claim 7, wherein the monitoring time period is determined for each expected pulse.

11. The method of claim 7, wherein the expected pulse comprises two pulse edges and wherein the occurrence of each pulse edge is constantly monitored.

12. A device for the failsafe monitoring of the rotational movement of a shaft, said device having a first part for picking up a characteristic pulse train with a number of

successive pulses which are separated by individual time intervals that are dependent on the rotational movement of the shaft, having a second part for determining a monitoring time period, having a third part for monitoring whether an expected pulse in the pulse train occurs within the monitoring time period, and having a fourth part for generating a control signal when the expected pulse does not occur within the monitoring time period, wherein the second part is configured to repeatedly adapt the monitoring time period to the individual time intervals.